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DIRECTORATE OF
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Imagery Analysis Report

Ramenskoye Flight Test Center (LII), USSR

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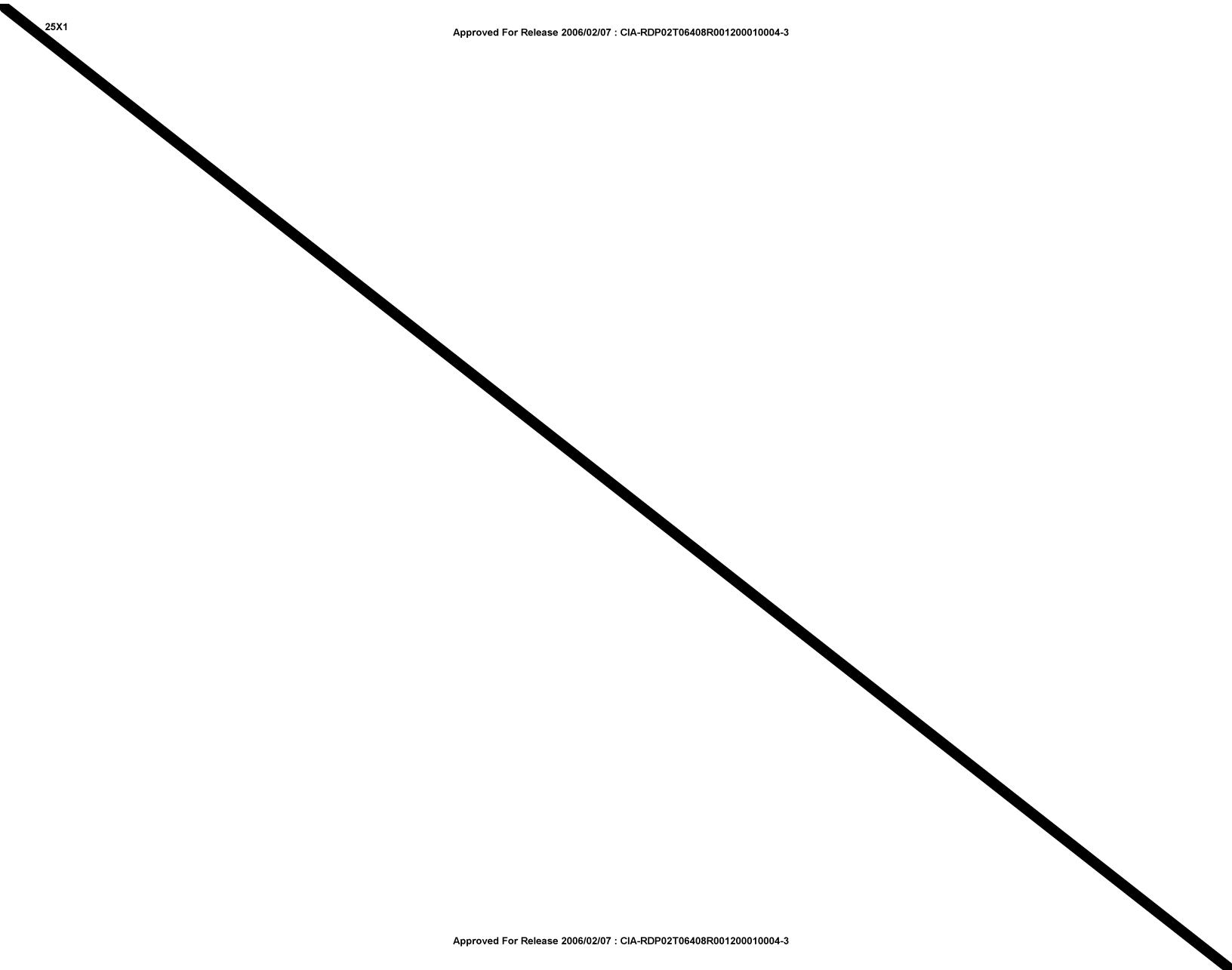

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RAMENSKOYE FLIGHT TEST CENTER (LII), USSR

SUMMARY

This report traces the development of the Ramenskoye Flight Test Center from [redacted] and identifies the facilities probably associated with each design bureau served by this center. The installation has undergone continuing and extensive expansion since World War II and is the center of flight testing and research for most new aircraft from the major Soviet design bureaus. An average of 43 different types of aircraft have been observed there on recent missions.

The Ramenskoye Flight Test Center has the longest hard-surfaced runway and the most hangar space of any airfield in the Soviet Union. Although a search for facilities to store and test weapons at or near the airfield proved negative, the possibility exists that air-to-air or air-to-surface missiles could be stored in some of the large hangars and buildings.

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INTRODUCTION

The Ramenskoye Flight Test Center (RFTC), which is also known as the Flight Research Institute, LII, Ramenskoye (55-33N 038-08E), is located approximately three nautical miles (nm) west of Ramenskoye and 20 nm southeast of Moscow (Figure 1). The Center consists of an airfield with the longest hard-surfaced runway in the USSR, and the supporting maintenance areas, hangars, laboratories and offices needed to support a facility of this type. It is situated on a main rail line and is adjacent to the Central Aerohydrodynamics Institute (TsAGI). Other transportation services include a network of hard-surfaced roads and the Moscow River, a major navigable waterway.

RFTC is probably the most important flight testing facility in the USSR. The functions of RFTC are probably similar to those of Edwards Air Force Base, California. Most of the major Soviet aircraft design bureaus are represented at RFTC (see Figure 4). The design bureau maintenance/parking areas are determined by the identification of the aircraft which are usually parked within each area.

The purpose of this report is to provide a comprehensive, chronological study of the development of all facilities at RFTC on aerial and ground photography from [redacted] (Figures 2 and 4). The changes to the runways and parking areas are shown in Figure 3. A building-by-building construction history of RFTC is presented graphically in Figure 5. Three-view line drawings and available dimensions of each of the 14 hangars at RFTC are shown in Figures 6A through 6N.

All measurements have been made by the NPIC Technical Intelligence Division with the exception of those indicated by an asterisk (*), which were made by CIA/IAS. The NPIC/TID measurements are considered to be accurate within ± 5 feet or ± 5 percent, whichever is greater for linear building dimensions, ± 5 feet or ± 10 percent, whichever is greater for building heights, ± 5 feet for runway widths, and ± 1 percent for runway lengths.

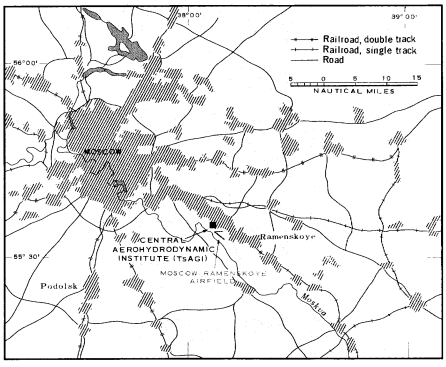

FIGURE 1. LOCATION MAP

DESCRIPTION OF FACILITIES

Runways (Figure 4)

RFTC has two active concrete runways. One is oriented northwest/southeast and measures 17,650 by 395 feet with a 255-foot* sod overrun at the northwest end and a 600-foot* sod overrun at the southeast end. The second is an east/west runway and measures 9900 by 270 feet with a 290-foot* sod overrun at the east end and 125-foot* sod overrun at the west end. Much of this runway is covered with an asphalt-base sealer.

Taxiways, Aprons and Dispersal Areas (Figure 5)

The description, location and dimensions of each taxiway, parking apron and dispersal area are shown in the table below.

TABLE I

Description	Location	Dimensions* (In Feet)	Remarks
Concrete parallel taxiway	Parallels NW/SE runway	90 (wide)	
Two concrete crossover links	Connect parallel taxiway with NW/SE runway	90 (wide)	
Two concrete crossover links	Connect parallel taxiway with NW/SE runway	200 (wide)	
Two concrete end connecting links	Connect parallel taxiway with NW/SE runway	---	
Concrete loop taxiway	Serves E/W runway	60 (wide)	
Concrete crossover link	Connects E/W runway with taxiway	40 (wide)	
Concrete crossover link and parking apron	3000' ENE of RP**	2900 x 250	Formerly a runway, now used both as a crossover link connecting the E/W runway with the loop taxiway and as a parking apron on which both MIG and Sukhoi aircraft are usually parked
Concrete assembly apron	East end of E/W runway	660 x 250	
Concrete hangar apron	3100' SSE of RP	1200 x 600-850	Used mostly by Myasishchev and Mil aircraft
Concrete parking apron	1600' SSE of RP	1900 x 300-425	Transient parking
Four helicopter parking pads	3000' S of RP	140 (diameter)	Used mostly by Mil aircraft
Ten concrete pads	3000' S of RP	20 x 20	Used mostly by Mil aircraft

(Table I continued on Page 4)

TABLE I (CONTINUED)

Description	Location	Dimensions* (In Feet)	Remarks
Concrete hangar apron	1600' NE of RP	2700 x 440	Used mainly by Ilushin aircraft
Concrete parking apron	4900' NE of RP	750 x 500	Used mainly by Yakovlev aircraft
Concrete hangar apron	6000' NE of RP	500 x 200	Used mainly by MIG aircraft
Concrete hangar apron	6350' ENE of RP	500 x 250	Used mainly by Sukhoi aircraft
Concrete hangar apron	7200' ENE of RP	2750 x 230-460	Used mostly by Tupolev aircraft
Concrete parking apron	4500' ENE of RP	2400 x 200	Also has 14 concrete hardstands along one edge of the apron. Used mainly by Tupolev aircraft
Concrete parking apron	5600' ENE of RP	340 x 210	Usually used by fighter aircraft
Concrete parking apron	5950' ENE of RP	370 x 150	
Concrete parking apron	5400' ENE of RP	190 x 160	

* These measurements have been made by CIA/IAS.
** RP = Reference Point

Maintenance Areas (Figure 4)

Each portion of the airfield probably assigned to a design bureau has its own maintenance area.

Myasishchev's area (Item 1) contains one very large hangar, a wall-secured probable maintenance facility (Item 38), two maintenance sheds, one workshop and four small sheds.

MIL's area (Item 2) contains one large hangar, one administration building, one maintenance building, one storage building and four utility buildings.

Ilushin's area (Item 4) contains two very large hangars, three large hangars, one administration building and two utility buildings.

Yakovlev has no hangars in support of his aircraft. One small administration building, two small administration/laboratory buildings, one probable maintenance/machine shop, one vehicle storage building, one storage building and two utility buildings support this area (Item 5).

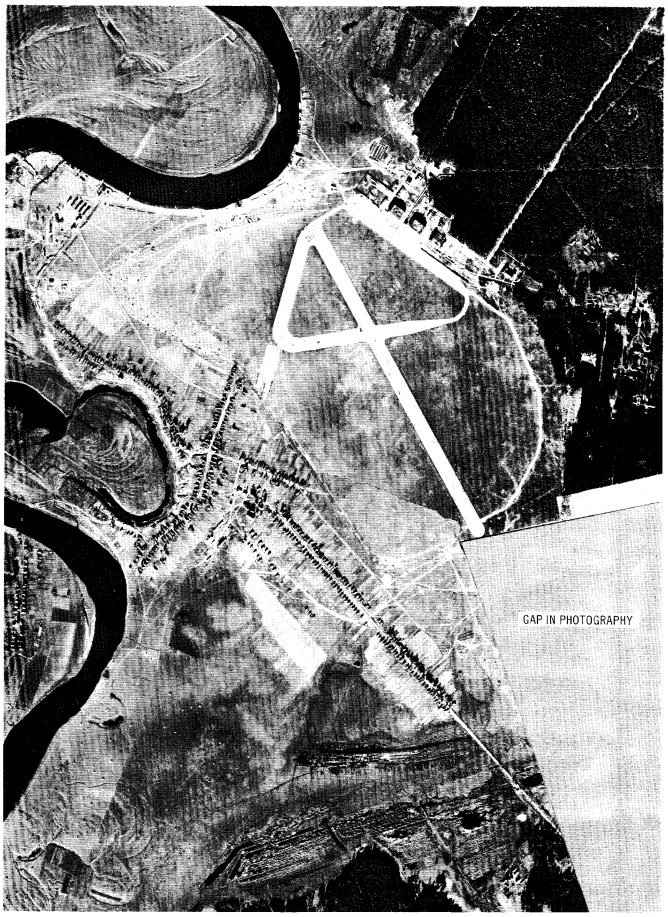

FIGURE 2. RAMENSKOYE FLIGHT TEST CENTER, [redacted]

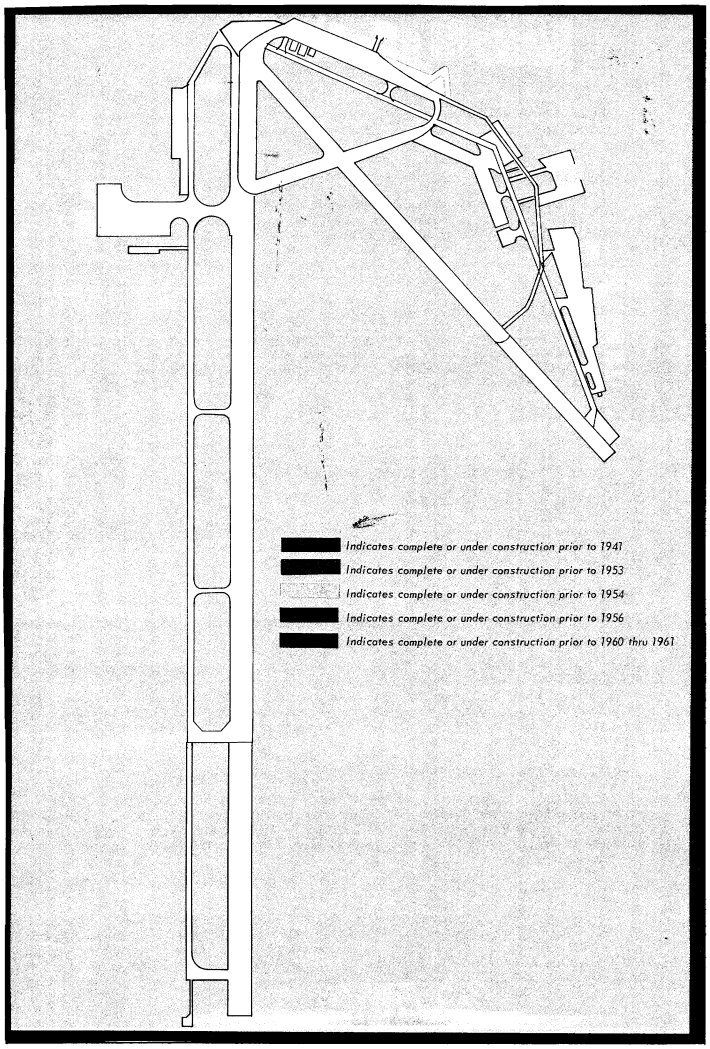

FIGURE 3. RUNWAY AND PARKING CHANGES, 1941 THRU 1967.

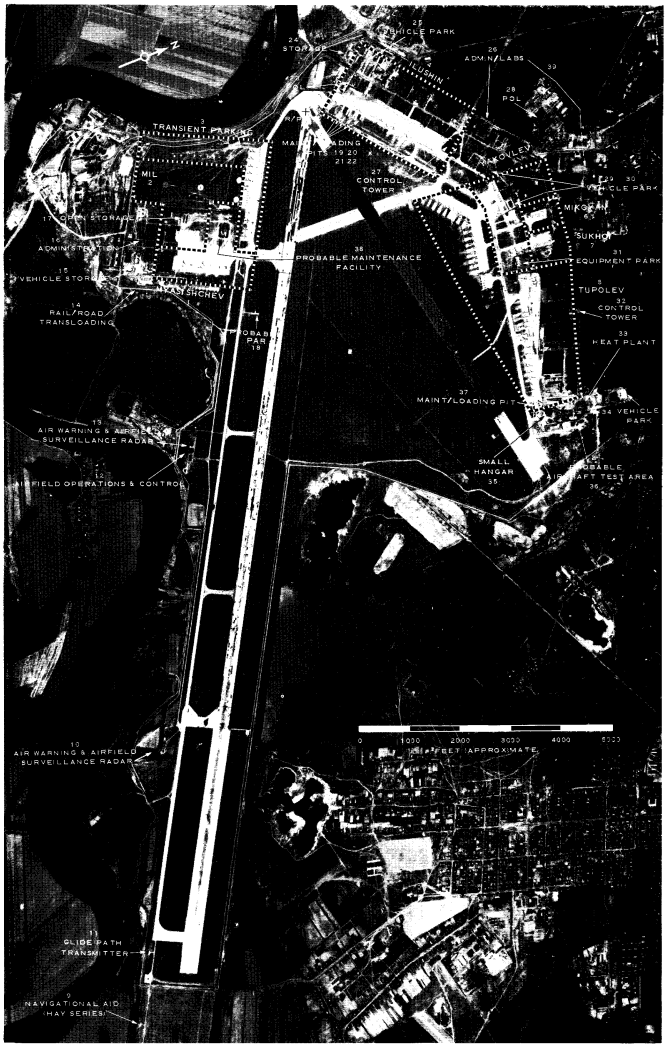

FIGURE 4. RAMENSKOYE FLIGHT TEST CENTER [redacted]

Mikoyan's area (Item 6) contains one long maintenance building and a large hangar which is shared by Sukhoi.

Sukhoi's area (Item 7), in addition to the hangar shared with Mikoyan, contains three small utility buildings.

Tupolev's maintenance/support (Item 8) includes two very large hangars, one large hangar, one medium hangar, one small hangar under construction, one probable machine shop, one maintenance shed and three small utility buildings.

A small hangar (Item 35) at the east end of the airfield is used in support of the Ram A aerodynamic vehicle program.

Administration/Laboratory Areas (Figure 4)

A small administration area (Item 16) 4600 feet south of the reference point consists of three small administration buildings. Located 2200 feet north of the reference point is a small laboratory area containing two small laboratory buildings. A small administration area, containing four administration buildings probably associated with the security of the installation, is located 2600 feet north of the reference point. There is a large administration and laboratory area (Item 26) 4300 feet northeast of the reference point with two laboratories, ten administration/laboratory buildings, three administration/support buildings, one storage building, and seven utility buildings. The main administration/laboratory area (Item 39) is located 7400 feet northeast of the reference point and consists of one laboratory, one laboratory/support building, one administration/laboratory building, six administration buildings, four administration buildings/barracks, one storage building, four utility buildings, and one cooling tower.

Housing Areas

Most of the housing is probably off-base in the nearby housing areas north and east of the airfield (Figure 4). A small area 5300 feet northeast of the reference point contains five houses.

POL Storage (Figure 4)

A fuel storage and control facility (Item 23) is located 1200 feet north of the reference point and consists of two small support buildings, refueling equipment for tank trucks, and buried POL storage tanks. Another POL storage facility (Item 28) is located outside the airfield security 5500 feet northeast of the reference point; it consists of a control building, a support building, and buried POL tanks. It is wall secured and probably supports the airfield.

Probable Precision Approach Radar (PAR)

Located 4100 feet southeast of the reference point, this facility (Figure 4, Item 18) consists of four unidentified vans and three small sheds on a concrete hardstand positioned between the northwest/southeast runway and taxiway. This facility probably contains precision approach radars; however, they could not be identified on photography.

Air Warning and Airfield Surveillance Radar (Figure 4)

There are two such facilities located at RFTC. One (Item 13) is 7100 feet southeast of the reference point and contains two Bar Lock radars (one ground mounted and one platform-mounted), two platform-mounted unidentified radars (one of which is possibly a Long Talk), one control tower, two airfield control support buildings, and two utility buildings. The second facility (Item 10) is located 12,900 feet southeast of the reference point and consists of one Token radar, one control building, and two utility buildings.

Navigation Aid

A Hay series navigation aid (Figure 4, Item 9) is located 18,300 feet southeast of the reference point and consists of one Hay Rick, five associated vans, and a small shed.

Other Instrument Landing Aids (ILS) (Figure 4)

The following are other facilities associated with the ILS system and their locations with respect to the reference point: a probable glide path transmitter (Item 11) 16,800 feet southeast, a probable localizer 19,500 feet southeast, a small building 4100 feet south-southeast on which is mounted an unidentified piece of equipment, inner marker beacons 3.5 nm southeast and 1.1 nm northwest, an outer marker beacon 5.1 nm southeast, and a possible outer marker beacon located 3.3 nm northwest.

Visual Landing Aids

Both runways have runway lighting with threshold lighting at each end of both. The northwest/southeast runway has an approach lighting system at the southeast end only. Although they have appeared on earlier photography, landing tees are no longer visible at the airfield.

Open Storage (Figure 4)

Open storage areas (Items 17 and 24) are located 3200 feet south and 1500 feet north-northwest of the reference point. A rail-to-road transloading facility (Item 14) is located 5700 feet south-southeast of the reference point.

Vehicle/Equipment Storage (Figure 4)

Vehicle and/or equipment storage facilities (Items 15, 25, 29, 30, 31 and 34) are located 4700 feet south, 1700 feet north, 4400 feet northeast, 5100 feet northeast, 7400 feet east-northeast and 9600 feet east-northeast of the reference point.

Airfield Control and Operations (Figure 4)

RFTC has three control and operations facilities. One of these (Item 12), located approximately midway along the long runway and 7000 feet south-southwest of the reference point, is the probable control center for the airfield aircraft operations. A second control and operations facility (Item 27) located at the east-northeast edge of the Ilushin parking/maintenance area and 3600 feet northeast of the reference point, is probably used for flight test control or as a backup tower for the previously mentioned facility. The third control tower and operations building (Item 32) is located on the northeast side of the airfield, 7800 feet east-northeast of the reference point, but it is probably no longer in use.

Probable Aircraft Test Facility (Figure 4)

A probable aircraft test facility (Item 36) is located 9100 feet east of the reference point and consists of two vehicle/equipment storage buildings, one probable shock test horn and two probable shock test poles with cables. Several aircraft and aircraft fuselages of various types are usually located in this area. A heat plant is located adjacent to this area.

Maintenance/Loading Pits (Figure 4)

A total of five maintenance/loading pits (Items 19, 20, 21, 22 and 37) are located at RFTC. Four of these are located 800, 1000, 1150 and 1300 feet respectively northeast of the reference point. The fifth pit is located 8500 feet east of the reference point. The respective measurements of the pits are [redacted] 25X1 25X1

HIGHLIGHTS OF THE CHRONOLOGICAL DEVELOPMENT OF THE
RAMENSKOYE FLIGHT TEST CENTER, 1941 - 1967
(All item numbers refer to Figure 5)

1941 - 1942

25X1 25X1 RFTC was first observed on [redacted] photography of [redacted] At that time it contained six major structures and ten small structures. Among the major structures were two hangars, (Items 50 and 58 and Figures 6I and 6H), a hangar under construction (Item 59 and Figure 6J), two administration/laboratory buildings (Items 71 and 123), and an administration building (Item 111). There were three concrete runways at this time: an east/west runway approximately 8300 feet* long, a north-northeast/south-southwest runway approximately 2600 feet* long and a northwest/south-east runway approximately 2200 feet* long with an approximate 1000-foot* graded-earth overrun to the southeast. 25X1 [redacted] photography showed no new construction or changes in previously existing facilities.

1947

25X1 The first ground photography of RFTC was obtained in [redacted] The photographs were taken from a position some distance south of the airfield and showed that a hangar (Item 59 and Figure 6J) was complete and that an operations building with a control tower (Item 136) had been constructed on the northeast side of the airfield since 1942. No other changes to the airfield were noted.

1953

Ground photography of July 1953, taken from some distance southwest of the airfield, revealed that many new structures had been constructed since 25X1 [redacted] The most significant of these were five new hangars (Items 8**, 21, 60, 135, 139 and Figures 6K, 6G, 6D and 6C respectively), two administration buildings (Items 9 and 10), a vehicle storage building (Item 29), and a vehicle maintenance building (Item 39).

1954

The east/west runway was extended to its present length prior to 1954, as indicated by the ASSOTW. No other facility changes were noted.

1956

Ground photography of August 1956, taken from some distance southwest of RFTC, revealed the construction of two hangars (Items 5 and 64 and Figures 6L and 6F), one administration building (Item 11), and one operations building (Item 66).

1958

The northwest/southeast runway was reconstructed and extended to approximately 11,500 feet between 1954 and 1958, as shown in the ASSOTW. This then became the principal runway at RFTC.

1962

25X1 25X1 The first satellite photography of RFTC was obtained in [redacted] but its quality did not permit identification of the support facilities. The first [redacted] photography suitable for this purpose was obtained in [redacted] The extension of the northwest/southeast runway to its present length was underway when observed on the 1961 photography. The construction was complete when next observed in [redacted] Significant structures observed for the first time included two hangars (Items 128 and 142 and Figures 6E and 6B), two control towers (Items 68 and 165), two administration buildings (Items 62 and 122), two laboratories (Items 88 and 107), 11 administration/laboratories (Items 70, 72, 73, 78, 81, 82, 83, 84, 86, 98 and 99), two maintenance/machine shops (Items 44 and 143), one vehicle maintenance building (Item 152), and one heating plant (Item 147). The concrete parking areas probably assigned to Tupolev, Yakolev, Mikoyan, Sukhoi and transient aircraft were also first observed at this time.

25X1 25X1

1965

The only significant change observed since 1962 was the addition of the small hangar (Item 157 and Figure 6A) probably used in conjunction with the Ram A program.

1967

Between [redacted] construction activity accelerated once again. Two new hangars (Items 144 and 145 and Figures 6M and 6N), one laboratory building (Item 65), and a maintenance/machine shop (Item 48) are the most significant items of construction.

25X1

** Although Item 8, was constructed in 1953 as a hangar, it is presently being utilized as a warehouse; therefore,a line drawing has not been prepared as in the case of the the other hangars.

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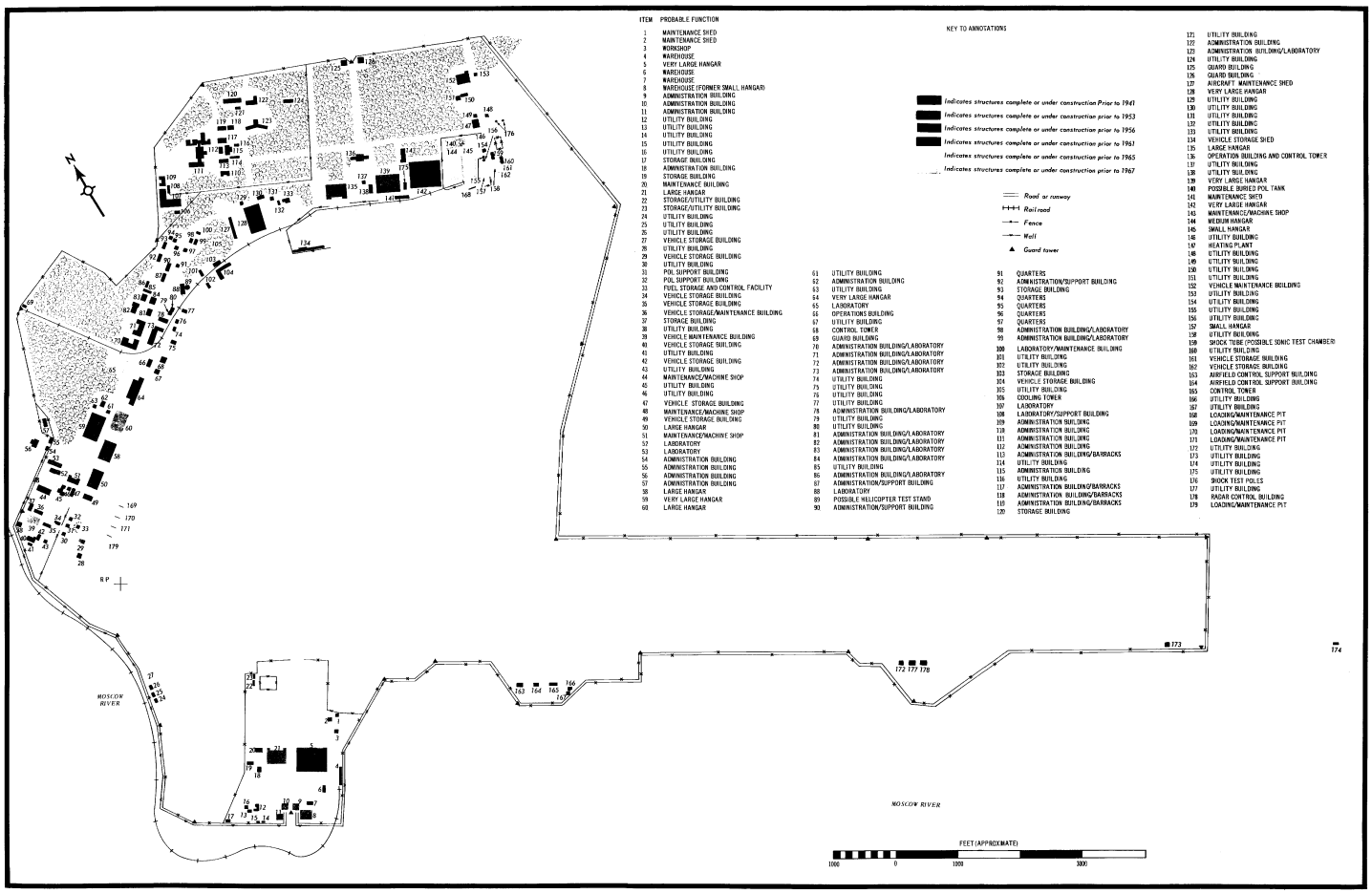


FIGURE 5. LINE DRAWING SHOWING THE CHRONOLOGICAL DEVELOPMENT OF RAMENSKOYE FLIGHT TEST CENTER.

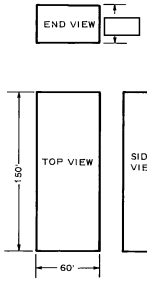


FIGURE 6A. BUILDING NO. 157

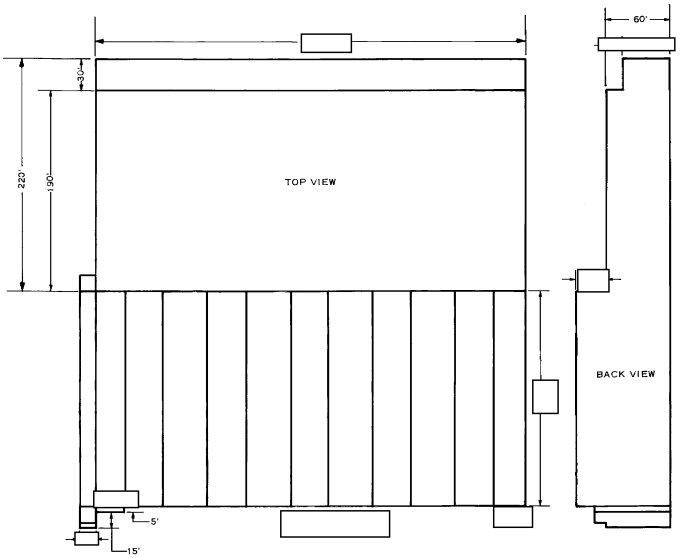
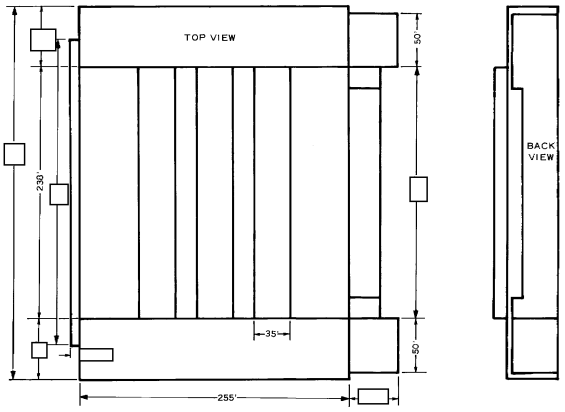


FIGURE 6B. BUILDING NO. 142



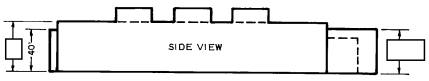


FIGURE 6C. BUILDING NO. 139

FOR REFERENCE REFER TO FIGURE 5

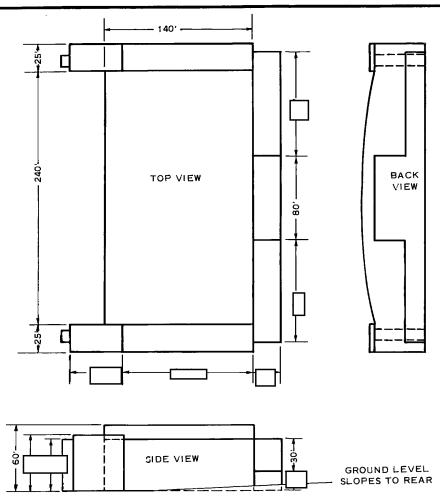
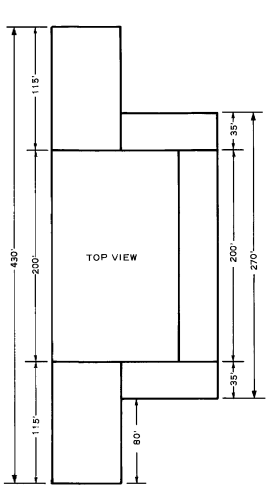


FIGURE 6D. BUILDING NO. 135



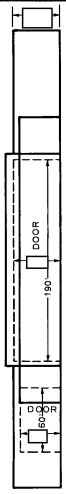
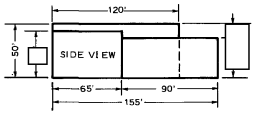
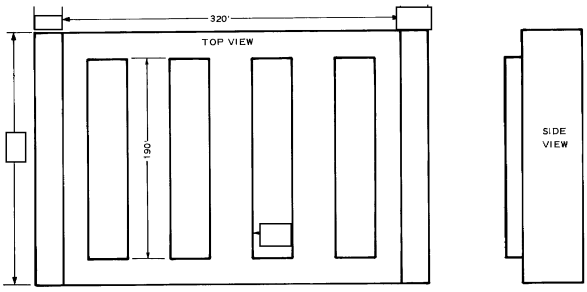


FIGURE 6F. BUILDING NO. 64





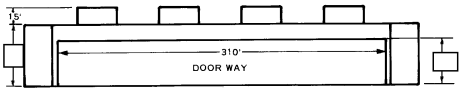
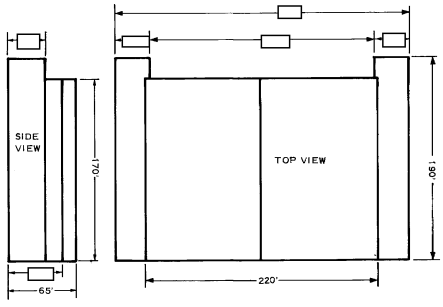


FIGURE 6E. BUILDING NO. 128



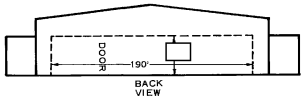


FIGURE 6G. BUILDING NO. 60

FOR REFERENCE REFER TO FIGURE 5

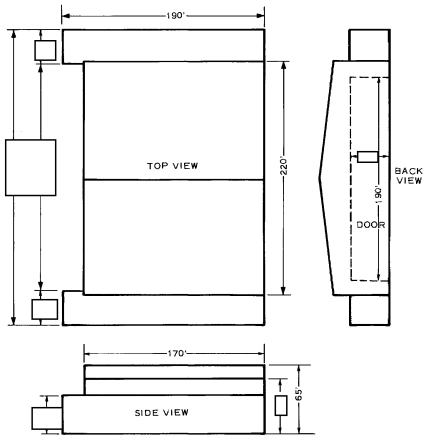


FIGURE 6H. BUILDING NO. 58

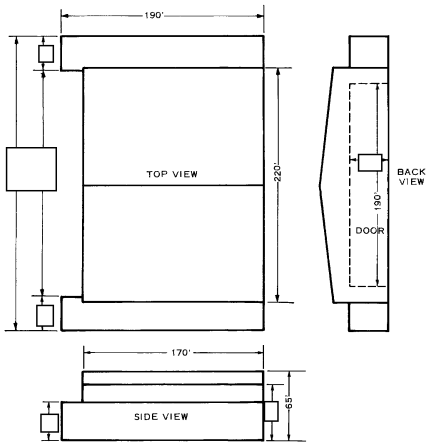
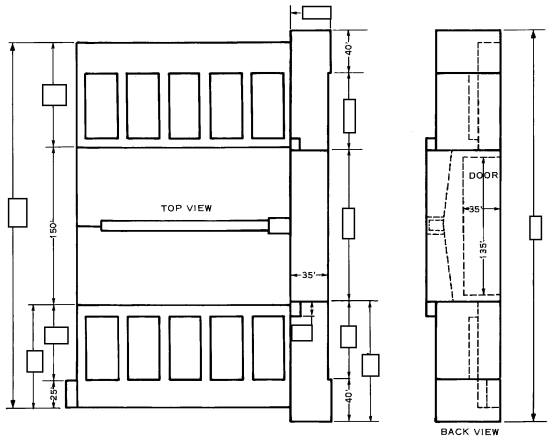


FIGURE 6 I. BUILDING NO. 50

#10



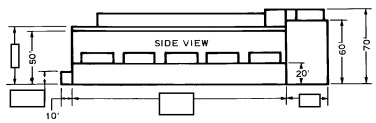


FIGURE 6J. BUILDING NO. 59

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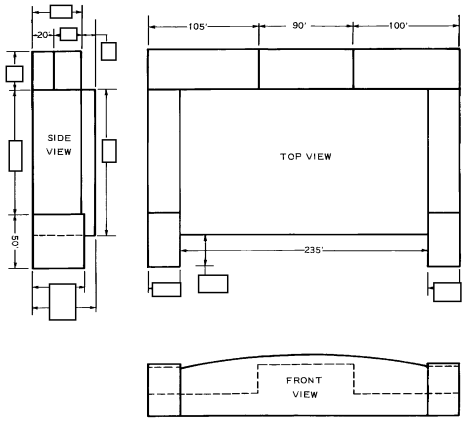


FIGURE 6K. BUILDING NO. 21

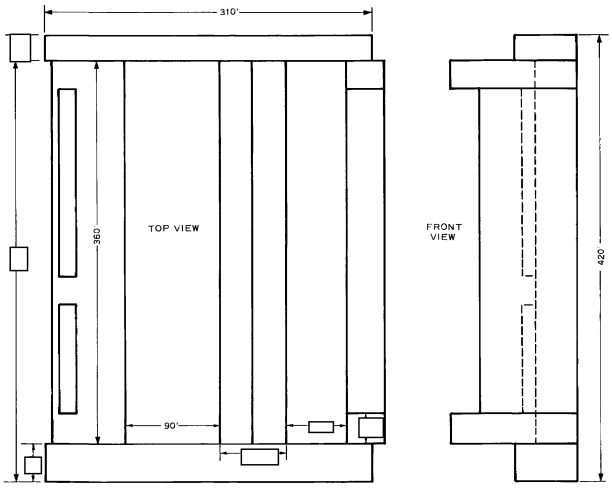
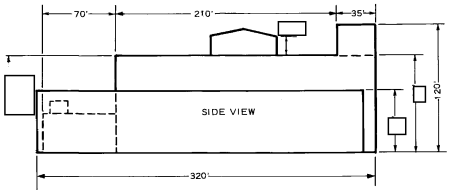


FIGURE 6L. BUILDING NO. 5



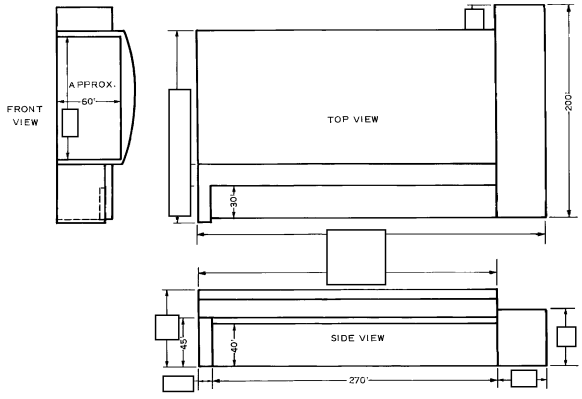


FIGURE 6M. BUILDING NO. 144

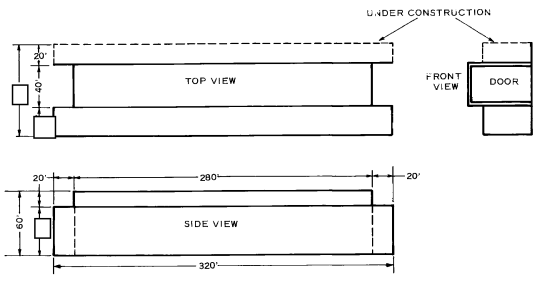


FIGURE 6N. BUILDING NO. 145

FOR REFERENCE REFER TO FIGURE 5

REFERENCES

25X1

25X1

Ground Photography

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Maps and Charts

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2. DIA. Airfields and Seaplane Stations of the World, Central European USSR, Volume 35, pages 157 and 158, September 1955 (SECRET)

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Requirement

C-SI5-83,076

IAS Project

30475-6

[redacted]